IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) An apparatus for authoring multimedia contents with object-based interactivity, which comprises:

a user interfacing unit for providing an interface to thereby edit object-based interactive multimedia contents by using a multimedia information editing and authoring tool,

wherein the user interfacing unit includes,

an interface for inserting or deleting media objects and editing properties characterizing each media object,

an interface for editing a logical relationship between the media objects,

an interface for editing a spatial allocation for the media objects,

an interface for editing a time allocation for the media objects,

an interface for editing a user interactivity for the media objects, and

an interface for displaying information for the media objects under editing;

an editorial information processing unit for converting the multimedia contents supplied from the user interfacing unit on an object basis to the form applicable to an object-based internal material structure supporting the editorial information authoring, storing the converted contents, and changing the form of the interactive multimedia contents information stored as the internal material structure to the file form so as to perform an input or output process of the contents; and

a media coding and decoding unit for encoding and decoding the interactive multimedia contents information provided from the editorial information processing means.

2. (Cancelled)

3. (Currently Amended) The apparatus as recited in claim ~~2~~ 1, wherein, through the user interactivity ~~unit~~ a user can manipulate a position of a media object, a display starting time of the media object and a display ending time of the media object during displaying edited and authored interactive multimedia contents.

4. (Previously Presented) The apparatus as recited in claim 1, wherein the user interfacing unit is implemented by an interface capable of editing exact values by utilizing a keyboard, a graphic user interface (GUI), or both of said two interfaces.

5. (Previously Presented) The apparatus as recited in claim 1, wherein the editorial information processing unit includes:

a data access application program interface for performing information exchange with the user interfacing unit;

an object editorial information processor for converting the multimedia editorial information supplied from the outside to the form applicable to the internal material structure and storing the converted multimedia editorial information;

an object-based internal material structure for reading in the object-based interactive multimedia contents stored in a storage to thereby preserve said contents as internal materials, and storing editing and authoring information inputted from the outside as internal materials to thereby edit and author current contents; and

a file input and output processor for performing an input and output process of edited and authored results related to the storage and carrying out the form conversion between the internal materials and input and output files.

6. (Currently Amended) The apparatus as recited in claim 5, wherein the object editorial information processor ~~contains~~ includes:

a time allocation editorial information processing module for processing editorial information related to the time allocation of each media object;

a spatial allocation editorial information processing module for processing editorial information for the spatial allocation of each media object;

a user interactivity editorial information processing module for processing editorial information for the user interactivity; and

a property and logical structure editorial information processing module for processing editorial information for properties characterizing each media object.

7. (Currently Amended) The apparatus as recited in claim 6, wherein the

object editorial information processor further ~~contains~~ includes an object description information processing module for examining whether information for managing and searching media objects is proper or not, storing said information as internal materials and converting the object description information stored in the internal material structure to the form that the outside can refer to.

8. (Original) The apparatus as recited in claim 6, wherein the object editorial information processor performs the editorial information processing for a higher level authoring, a lower level authoring and the higher and lower level authoring.

9. (Original) The apparatus as recited in claim 5, wherein the object-based internal material structure supports internal materials for a higher level authoring, those for a lower level authoring and those for the higher and lower level authoring.

10. (Currently Amended) The apparatus as recited in claim 5, wherein the file input and output processor ~~contains~~ includes:

a file analyzing module for reading in the object-based interactive multimedia contents stored in the storage, storing the contents in the object-based internal material structure and examining errors of the contents by analyzing the contents; and

a file generating module for transferring edited and authored results of the object-based interactive multimedia contents stored in the object-based internal material structure to the storage.

11. (Original) The apparatus as recited in claim 10, wherein the file input and output processor further contains a form converting module for performing the form conversion between the internal material structure and the input and output form.

12. (Original) The apparatus as recited in claim 11, wherein the form converting module changes a higher level authoring result to a lower level authoring result when the editing and authoring tool provides the higher and lower level authoring, and converts the edited and authored contents to the higher level file form which is not supported by the editing and

authoring tool.

13. (Original) The apparatus as recited in claim 1, wherein the media coding and decoding unit includes:

a pre-post processor for performing a prior process and a post process required for the media coding and decoding;

a media coder for encoding media data so as to produce a media stream; and

a media decoder for decoding a media stream to reproduce media data.

14. (Currently Amended) The apparatus as recited in claim 13, wherein the media coder or decoder further ~~contains~~ includes a media processing accelerator, which is hardware, dedicated for performing the media coding and decoding in real-time or a higher speed than real-time.

15. (Currently Amended) An object-based interactive multimedia contents authoring method for use in an object-based interactive multimedia contents authoring apparatus, comprising the steps of:

securing a new internal material structure and a new authoring space on a user interface, and receiving a plurality of parameters or initializing the authoring space to preset defaults;

providing for, on the user-interface, (a) inserting or deleting media objects and editing properties characterizing each media object, (b) editing a logical relationship between the media objects, (c) editing a spatial allocation for the media objects, (d) editing a time allocation for the media objects, (e) editing a user interactivity for the media objects, and (f) displaying information for the media objects under editing;

converting multimedia contents supplied from a user on an object basis to the form applicable to an object-based internal material structure supporting editorial information authoring;

authoring object-based interactive multimedia contents by inserting and deleting media objects based on the initialized authoring space and editing the user interactivity on an object basis and properties of objects; and

storing the authored object-based interactive multimedia contents in a binary or text form.

16. (Currently Amended) A computer readable medium on which a program used in implementing an object-based interactive multimedia contents authoring apparatus employing a processor is recorded, comprising:

a first program instruction means for securing a new internal material structure and a new authoring space on a user interface, and receiving a plurality of parameters or initializing the authoring space to preset defaults;

a second program instruction means for providing for, on the user-interface, (a) inserting or deleting media objects and editing properties characterizing each media object, (b) editing a logical relationship between the media objects, (c) editing a spatial allocation for the media objects, (d) editing a time allocation for the media objects, (e) editing a user interactivity for the media objects, and (f) displaying information for the media objects under editing;

a ~~fourth~~ third program instruction means for converting multimedia contents supplied from a user on an object basis to the form applicable to an object-based internal material structure supporting editorial information authoring;

a ~~second~~ fourth program instruction means for authoring object-based interactive multimedia contents by inserting and deleting media objects based on the initialized authoring space and editing the user interactivity on an object basis and properties of objects; and

a ~~third~~ fifth program instruction means for storing the authored object-based interactive multimedia contents in a binary or text form.